National Aeronautics and Space Administration

Educational Product	
Educators & Students	Grades 5-12

ET-2002-09-107-ARC

Educational Topic

Aerospace Engineer

Related Job Titles:

Fluid dynamicist, mechanical engineer

Job Description:

Aerospace engineers design, develop, test and oversee the building of aircraft, spacecraft, propulsion systems and space flight mission paths. When designing a new product, engineers first figure out what it needs to do. They then design and test the parts, fit the parts together and test to see how successful it is. They also write reports on the product. Most engineers work in office buildings or laboratories. Some work outdoors at construction sites. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Do you like to take things apart and put them back together?

Suggested School Subjects / Courses:

- Mathematics (trigonometry, calculus)
- Science (physics, chemistry,)
- Computer programming
- Engineering (fluid dynamics, aerodynamics, thermodynamics, propulsion dynamics, mechanical)

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in aerospace engineering or a related subject from an accredited college or university. To do research, a Ph.D. is highly desired for this position.

Areas of expertise:

- *Aerodynamics*: design aerospace craft with the best air flow
- *Structures*: design and build new constructions such as a space station
- *Propulsion*: design and develop systems that drives or propels an aerospace craft
- *Astrodynamics*: design spacecraft that can move and function in a space environment

Additional Resources:

- Careers in Aviation/Aerodynamics
  http://wings.ucdavis.edu/Careers/index.html
- Take Off!
  http://www.mcet.edu/nasa/index.html
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
  http://core.nasa.gov
- Robotics Education
  http://robotics.arc.nasa.gov
- Junior Engineering Technical Society
  http://www.asee.org/jets
- Accreditation Board for Engineering and Technology, Inc.
  http://www.abet.org
- Student Educational Employment Programs
  http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Jobs
  http://nasajobs.nasa.gov/
- NASA Summer High School Apprenticeship Research Program (SHARP)
  http://www.mtsibase.com/sharp/

What can I do right now?

- Participate in Bot-Ball or FIRST Robotics competitions
  (*see Robotics Education* http://robotics.arc.nasa.gov).
- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Participate in science fair projects.
- Visit Astro-Venture regularly to participate in chats and activities.
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit.
  (202) 783-7200
- Order activity books, poster sets and engineering kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.

Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic

Your evaluation and suggestions are vital to continually improving NASA educational materials.
Thank you.

http://quest.nasa.gov/people/index.html